



#### What is Phos Pro?



Phos Pro is an innovative blend of herbs, minerals, and nutrients formulated to support healthy phosphorus levels in the body. Phosphorus is essential for maintenance of strong bones and teeth and tissue repair, and for supporting the kidneys in filtering and removing waste from the body.

#### **Phos Pro contains:**

Magnesium 40 mg 10.5% **Proprietary blend 569 mg** Orthophosphoric acid, Inositol, Choline Bitartrate, Hydrangea Extract, Apple Cider Vinegar (organic) **Other Ingredients:** Distilled water



### **Benefits**

#### May support skeletal health

Phosphorus is an essential mineral and a vital component of skeletal development. About 1.1.4% of fat-free mass in humans comprises phosphorus, and an estimated 85% of this is in bones and teeth.

Calcium and phosphate are the two main constituents of hydroxyapatite, the bone mineral that strengthens the organic matrix. Bone contains an estimated 99% of the body's entire calcium stores and 80% of phosphorus stores, Both calcium and phosphate positively influence the activity of bone-forming and bone-resorbing cells. Inorganic phosphate is also involved in the maturation of osteocytes, which make up most of the cells in bone<sup>1</sup>.

#### Support cell membranes

Phosphorus is an essential macronutrient for growth, development, and reproduction. It is a basic component of cellular structures, membrane integrity, and regulating enzymatic activities<sup>2</sup>.

Phosphorus plays a crucial role in mineral metabolism and has many other roles in cellular signaling. It is an essential component of phospholipids in plasma membranes and organelle membranes, the nucleotide components of deoxyribonucleic acid (DNA) and ribonucleic acid (RNA). Many proteins and sugars involved in intracellular signaling pathways are phosphorylated.

#### **Essential for energy metabolism**

Phosphorus is necessary for several enzymatic processes including glycolysis, renal ammonia production, and oxidative phosphorvlation in the mitochondria. These processes are required for cellular production of the body's main energy source, adenosine triphosphate (ATP)<sup>3</sup>.

Phosphorus also regulates the body's oxygen-carrying capacity by its role in determining the generation of specific red blood cells, permitting the healthy oxygenation of tissues<sup>4</sup>.

#### **Supports cognitive function**

Magnesium, calcium and phosphorus are important macronutrients for proper function of the central nervous system. Magnesium plays a vital role in neurochemical transmission and its deficiency has been related to a number of disorders of the central nervous system.Clinical evidence shows that even marginal deficiencies of one or more of these micronutrients are common, even in developed countries, and can significantly affect cognitive performance, especially elderly and individuals under stress<sup>5</sup>. Choline is an essential nutrient involved in multiple functions in the body and brain. Choline supplementation is vital during pregnancy for brain development, in elderly patients for support of cognitive performance, and in supporting memory function in patients with neurological disorders. Animal studies suggest that choline supplementation can significantly improve cognitive and locomotor performance, as well as reducing oxidative stress and enhancing cholinergic neurotransmission and monoamine levels in the brain<sup>6</sup>.

#### Support normal phosphorus levels

Regulation of calcium and phosphorus homeostasis is controlled by various ions and hormones in the intestines, kidneys and bone. Disturbances in serum calcium and/or phosphorus can lead to serious health issues including kidney stones and bone disease. The regulatory hormones of calcium and phosphorus play a central role in the development of calcium-containing kidney stones, the most common type of kidney stone. Some research has shown lower levels of serum phosphate in patients with kidney stones, and one study showed that patients who developed kidney stones had lower intakes of dietary calcium and potassium. However, it should be noted that intake of phosphorus should be monitored, as high intake is associated with increased mortality<sup>7</sup>.

#### May assist with healthy kidney function

Maintenance of phosphorus concentrations within an optimum range is crucial for healthy kidney function. In the urine, phosphorus (as phosphate) is an important buffer of acid due to its various forms (monovalent, divalent, trivalent). Phosphate also helps to protect the acid/base balance of the blood<sup>8</sup>.

Hydrangea has long been used in traditional medicine in China for its important anti-inflammatory and antioxidant benefits. Clinical studies show it has significant renal protection effects as many acute and chronic kidney injuries are caused by system inflammation, oxidation, and autoimmunity. It has been shown to decrease concentration of blood urea nitrogen and creatinine, as well as attenuating renal oxidative stress and tubular pathological injury and apoptosis. inhibit overproduction of proinflammatory cytokines Further research demonstrates that hydrangea extract's anti-inflammatory and antioxidant effects may ameliorate kidney damage and suppress renal inflammation and tubular cell apoptosis?.

- https://www.tandfonline.com/doi/abs/10.1080/07315724.2011.10719988 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3135939/
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- https://www.ncbi.nlm.nih.gov/pro/articles/PMC3893724/ https://www.ncbi.nlm.nih.gov/pro/articles/PMC5358452/



## Dosage

Adults: Take 20 drops daily or as directed by your health care professional.

# Safety and side effects

Phos Pro has an excellent safety rating with no reported interactions from the supplement.

Phos Pro is not intended to replace any medication or procedures used to treat cancer, viral infections, or illnesses. Do not discontinue treatment or cancer medications without a doctor's permission.

Women who are pregnant, nursing, or any person who is immune-compromised should consult their physician before using this product. Certain medications may interact with individual ingredients – talk to your doctor if you take any medications.

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